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VOL. 13 No. 45 November 8, 1963

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Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

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Volume 13 November 8, 1963 Number 45

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

SPOTTED ALFALFA APHID abundant in Pottawatomie and Shawnee Counties, Kansas, in Kaw River Valley since recent rains, and populations high on new plantings of alfalfa in Weld County, Colorado. Also severe on alfalfa near Amelia, Amelia County, Virginia. Surveys for spotted alfalfa aphid this year in Washington negative; first time in several years that infestations have not been found in southeastern part of State in early fall. (pp. 1309, 1320). PEA APHID heavy on alfalfa in Bernalillo and Sandoval Counties, New Mexico, and moderate to heavy locally along Snake River south of Asotin, Washington. Populations decreased in northeast Ohio and in Wisconsin. (p. 1309).

Few GREENBUGS found on wheat in south central and north central Oklahoma; Logan, Lincoln and Larimer Counties, Colorado; and in 16 panhandle counties of Texas. WHEAT CURL MITE found on fall planted wheat in Logan County, Colorado, and symptoms of wheat streak mosaic present in Logan, Sedgwick, Phillips and Washington Counties, same State. (pp. 1309, 1320). Heavy populations of a COCCID (Chortinaspis subchortina) damaging St. Augustine grass lawns in Bell County, Texas; only third record of species in State. (p. 1311). SOUTHWESTERN CORN BORER survey in Arkansas showed percent of lodged corn 2.2 percent compared with 12.3 percent in 1962. (p. 1311). Resistance tests in South Dakota showed various degrees of resistance by WESTERN CORN ROOTWORM to the chlorinated hydrocarbon insecticides in southeastern parts of the State. (p. 1311). HESSIAN FLY low in southeastern Kansas, and wheat stems and stubble infested by WHEAT STEM SAWFLY easily found in sections of Auglaize County, Ohio. (p. 1312).

A LEAFHOPPER (Homalodisca insolita) found in locality of Pinellas County, Florida; southernmost record of this proven vector of phony peach disease in State. (p. 1313).

Adults of PINK BOLLWORM continue to be collected in sex lure traps near Coolidge Airport in Pinal County, Arizona. (p. 1315).

In California, MOUNTAIN PINE BEETLE killing sugar pines in several areas, and FIR ENGRAVER causing heavy kill of white fir in Dodge Ridge area of Stanislaus National Forest. In addition, SAGEBRUSH DEFOLIATOR reported severely damaging approximately 20,000 acres of sagebrush lands in Modoc County; approximately 50 percent of sage killed in area. (pp. 1315, 1316).

DETECTION

A PSOCID (Ectopsocus maindroni) found established in Hawaii, a new State and U.S. record. (p. 1324).

New county records of significance include ELM LEAF BEETLE in Dickinson County, Kansas (p. 1316), and a BROWN SPIDER (Loxosceles reclusa) in Pulaski County, Illinois (p. 1319).

CORRECTIONS and ADDITIONAL NOTES

See page 1320.

SPECIAL REPORTS

Corn Rootworm Situation in Iowa (map). (p. 1310).

Status of the Screw-worm in the Southwest. (p. 1318).

Hawaiian Insect Notes. (p. 1323).

Insects Not Known to Occur in the United States (Indian cotton jassid, Empoasca devastans Distant). (p. 1325).

Reports in this issue are for week ending November 1, unless otherwise indicated.

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WEATHER BUREAU 30-DAY OUTLOOK

NOVEMBER 1963

The Weather Bureau's 30-day outlook for November calls for temperatures to average below seasonal normals in States along the Atlantic and Gulf coasts and in the Appalachian region. Above normal averages are predicted in the western Great Lakes, and also in the western half of the Nation except for near normal in Pacific and southern border States. In areas not specified, about normal temperatures are indicated. Precipitation is expected to remain deficient in the eastern half of the Nation, except for near normal rainfall along the Atlantic and Gulf coasts. Subnormal precipitation is also anticipated over the northern Rockies and in the far Southwest. Elsewhere in the western half of the country near normal amounts are indicated except above normal along the central and northern Pacific coast.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $4.80 a year, $2.40 a half year.

WEATHER OF THE WEEK ENDING NOVEMBER 4

At the beginning of the week, a mound of polar continental air lay over the Country's midsection and was pushing a cold front southeastward toward the Gulf and Atlantic coasts. It brought light sprinkles to the lower Missouri and Ohio River Valleys and subfreezing temperatures throughout most of the southeast. The cold air, flowing across the warm waters of the Great Lakes, triggered numerous thunderstorms and a few tornadoes and waterspouts. On Monday, October 28, a storm approached the northwestern coast of Washington. It brought rain to the coastal locations and snow to the higher elevations. As the cold front moved inland, it brought snow to the northern and central Rocky Mountains and a few flurries to the northern Great Plains. Leadville, Colorado, received 7 inches and Lander, Wyoming, received 2 inches. A few light flurries occurred as far south as Madison, Wisconsin. As the storm crossed the Great Plains and moved southeastward, it produced rains over most of the Nation from the Great Plains eastward to the Atlantic coast. Snowfall in Pennsylvania ranged from light flurries up to 6 inches. Heavier snowfall occurred in New England. Greenville, Maine, received 15 inches. Some other locations in Maine received up to 9 inches of snow. The cold front, as it pushed southeastward, dropped the temperatures to new lows for the season. Subfreezing temperatures occurred as far south as San Angelo, Texas, and the coasts of Alabama and Georgia. The cold temperatures ended the growing season for tender vegetables. The cold front passage was accompanied by widespread light rains over most of the northeast quarter of the Nation on Thursday, from Texas to the Great Lakes and eastward (except Florida) on Friday, and from Michigan to North Carolina and northeastward on Saturday. The light rains did not end the drought but reduced the danger of forest fires. Another storm approached the Far Northwest on Friday. It brought more precipitation to Washington, Oregon,
(continued on page 1322)

CEREAL AND FORAGE INSECTS

SPOTTED ALFALFA APHID (Therioaphis maculata) - WASHINGTON - Surveys have been negative this year. This is first time in several years, infestations have not been found in southeastern part of State in early fall. (Harwood, Telford). NEVADA - Averaged 1 per sweep in Moapa Valley alfalfa fields, Clark County. (Zoller). NEW MEXICO - Generally light in Chaves and Eddy County alfalfa fields. (N. M. Coop. Rpt.). OKLAHOMA - Large populations depositing moderate to heavy amounts of honeydew on alfalfa in Garvin, Murray and Bryan Counties; counts up to 1,250 per 10 sweeps. Moderate counts reported in Cotton County, with 350 per 10 sweeps noted in Tillman County, both in southwest. (Okla. Coop. Sur.). KANSAS - Abundant in Pottawatomie and Shawnee Counties in Kaw River Valley since recent rains. (Gates). Counts ranged from less than one to 200 per sweep in southeastern area. Some chemical controls have been applied in extreme southeast. (Peters). SOUTH DAKOTA - Averaged 64 per 100 sweeps in southeast area alfalfa. Gross morphology of species indicates that sexual form may be present, although thorough examination of aphids has not been completed at this time. (Hintz). WISCONSIN - Populations decreased; numbers in observation field at Brodhead dropped to 300-500 per sweep October 29 and 200 per sweep October 31. Alates in this field still averaged 14 per sweep on latter date. Dead aphids common, but causative agent unknown. (Wis. Ins. Sur.). VIRGINIA - All stages severe on alfalfa near Amelia, Amelia County. Alfalfa too short for hay but population completely defoliated plants; field has musty odor. (Holmes, Oct. 26).

PEA APHID (Acyrthosiphon pisum) - WASHINGTON - Infestations range moderate to heavy in isolated alfalfa fields along Snake River south of Asotin, Asotin County. (Harwood, Telford). NEVADA - Averaged 2-3 per sweep in alfalfa in Moapa Valley, Clark County. (Bechtel, Zoller). NEW MEXICO - Heavy in alfalfa in Bernalillo and Sandoval Counties. Lighter infestations noted in alfalfa fields in Dona Ana, Chaves and Eddy Counties. (N. M. Coop. Rpt.). WISCONSIN - Populations decreased noticeably; mummies prevalent in many alfalfa fields. Noticeable increase observed in fields having high populations of spotted alfalfa aphid, however. (Wis. Ins. Sur.). OHIO - Populations decreased in northeast area alfalfa fields; ranged 0-25 (average 5) per sweep in Wayne County. Decreasing in alfalfa throughout central area; averaged 2 per sweep near Urbana, Champaign County, and 4 per sweep near Wapakoneta, Auglaize County. Parasites and predators building up in many alfalfa fields. (Lyon).

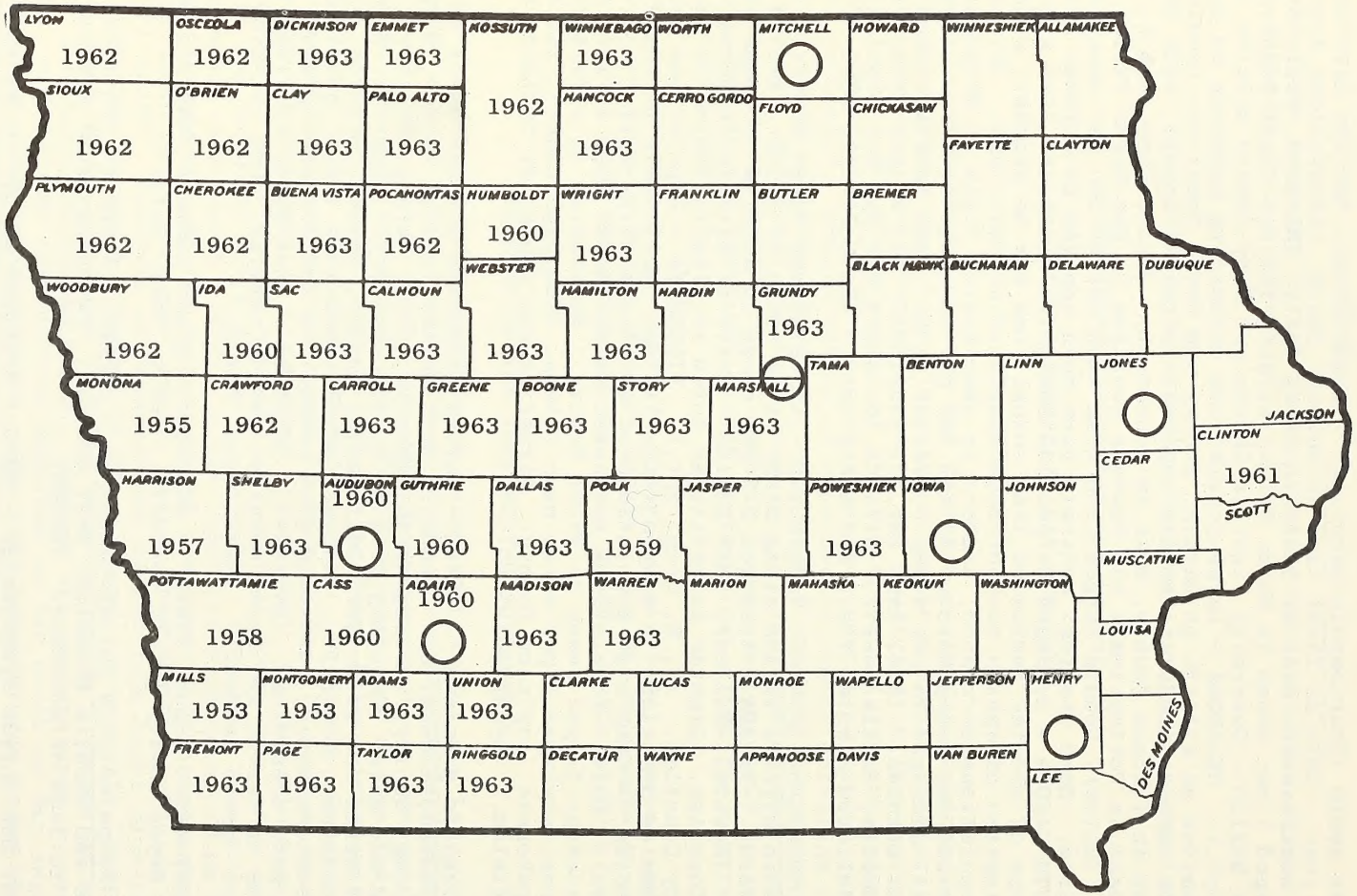
GREENBUG (Schizaphis graminum) - TEXAS - Survey conducted October 28-31 in following 16 panhandle counties: Randall, Deaf Smith, Castro, Parmer, Oldham, Potter, Armstrong, Donley, Collingsworth, Wheeler, Gray, Carson, Swisher, Briscoe, Floyd and Hale. Greenbug present in all counties. Ranged 0-15 per linear foot of drill row in Potter, Deaf Smith, Castro, Parmer, Briscoe, Floyd and Swisher Counties. Generally, however, populations less than 1 per linear foot. Few predators noted. Greenbug also present on western wheatgrass. Wheat, generally, in good condition. (Daniels). OKLAHOMA - Occasional specimen found in wheat fields in Garvin and Bryan Counties (south central), and in Payne and Pawnee Counties (north central). (Okla. Coop. Sur.).

YELLOW SUGARCANE APHID (Sipha flava) - OKLAHOMA - Light numbers observed on wheat in Yuba area, Bryan County (south central). (Okla. Coop. Sur.).

A ROOT APHID (Rhopalosiphum rufiabdominalis) - KANSAS - Found on roots of wheat plants in Lane and Wichita Counties, west central. Secondary root systems not developed due to lack of moisture. (Gates).

TARNISHED PLANT BUG (Lygus lineolaris) - OHIO - Averaged 20 per 50 sweeps in field of alfalfa in Champaign County, west central. Populations lower in all other fields. (Lyon). WISCONSIN - Adults numerous on late flowers and in alfalfa fields in southern areas; few nymphs present. (Wis. Ins. Sur.).

CORN ROOTWORM SITUATION IN IOWA



DATE - Year when western corn rootworm (Diabrotica virgifera) first collected in county.

○ - Populations of northern corn rootworm (Diabrotica longicornis) resistant to aldrin and heptachlor.

Iowa Insect Information, Letter No. 17,
October 25, 1963

POTATO LEAFHOPPER (Empoasca fabae) - WISCONSIN - Averaged 1 nymph per sweep in many alfalfa fields in southern area. Few adults present; nymphal counts run as high as 8 per sweep. (Wis. Ins. Sur.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - OKLAHOMA - Counts per 10 sweeps in alfalfa ranged 1-5 in Garvin and 6-12 in Bryan Counties, south central. (Okla. Coop. Sur.).

MEADOW SPITTLEBUG (Philaenus spumarius) - OHIO - Moderate adult numbers still being found in west central area alfalfa in spite of cool temperatures. Adults per sweep averaged 2.5 in Champaign County and 1 in Auglaize County in old alfalfa fields. (Lyon).

A COCCID (Chortinaspis subchortina) - TEXAS - Heavy populations damaging St. Augustine lawns in Bell County. This is third record of species in State; previously reported on St. Augustine grass in Hidalgo County and on seacoast bluestem in Kenedy County. (Decker, McDaniel).

ALFALFA CATERPILLAR (Colias eurytheme) - WISCONSIN - Larvae continue common in many alfalfa fields; average as high as 1 per sweep. (Wis. Ins. Sur.). OKLAHOMA - Ranged 1-3 per 10 sweeps in alfalfa in Garvin, Murray and Bryan Counties (south central) and Tillman County (southwest). (Okla. Coop. Sur.). NEVADA - Numerous adults, but very few larvae and pupae, found in alfalfa in Moapa Valley, Clark County. (Bechtel, Zoller).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - ARKANSAS - Survey showed percent of lodged corn, by district, as follows: Northwest (4 counties), 2.8; north central (4 counties), 0.4; northeast (6 counties), 1.7; east central (7 counties), 3.1. State average was 2.2 percent compared with 12.3 for 1962. Lower percent of lodged corn in 1963 is due, in part, to a smaller percentage of corn planted in June and July than in 1962 and past years; another influencing factor, especially north of Arkansas River, was low survival of overwintering larvae resulting from abnormally cold weather during winter of 1962-1963. (Ark. Ins. Sur.).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Light to moderate on second-growth grain sorghum in Brazoria County. (Teetes).

CORN EARWORM (Heliothis zea) - OKLAHOMA - Light, scattered populations remain active in alfalfa in south central and southwest areas. (Okla. Coop. Sur.).

GARDEN WEBWORM (Loxostege similalis) - OKLAHOMA - Light numbers reported on seedling alfalfa in Roger Mills County, west central. (Okla. Coop. Sur.).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - OHIO - Populations continue to decrease; adults averaged 4 per 50 sweeps in a field of alfalfa in Shelby County, west central. (Lyon).

WESTERN CORN ROOTWORM (Diabrotica virgifera) - SOUTH DAKOTA - Resistance tests run at the Northern Grain Insect Research Laboratory by Dr. E. W. Hamilton showed various degrees of resistance by this pest to the chlorinated hydrocarbon insecticides in southeastern parts of the State. (Hintz).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi)- OKLAHOMA - Ranged 4-8 per 10 sweeps in Bryan County alfalfa, south central area. (Okla. Coop. Sur.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Adults ranged 8-13 per 100 sweeps in Sandoval County alfalfa fields. (N. M. Coop. Rpt.).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Data collected to November 1 shows very high adult mortality in such products as baled hay, baled straw and stored grain; however, very few live beetles have been recovered recently from

each of these products when handled according to conventional farm methods. Hay and straw from which these beetles were recovered were harvested in May of this year from heavily infested fields near Galien, Berrien County. (Turner).

WIREWORMS - NORTH CAROLINA - Melanotus communis and Conoderus lividus collected from 2 adjacent fields near Pantego, Beaufort County. These large fields in corn this year; reported to have been heavily damaged by these pests despite use of recommended controls. Field sifting of approximately 3 square yards of soil produced 13 larvae. Soil dark and high in organic material. (Jones, Mount).

GRASSHOPPERS - OKLAHOMA - Spot checks in wheat field margins in panhandle counties showed no damage; 2 per square yard highest count. (Okla. Coop. Sur.). NORTH DAKOTA - Egg survey in north central and central districts covered only fields showing economic adult infestations; results aligned closely with adult survey. Highest egg counts found in alfalfa, sweetclover and soil bank fields. Development ranged clear to segmented, but most in coagulated stage. Melanoplus bivittatus, M. sanguinipes, M. packardii, M. femurrubrum and M. differentialis dominant species. Parasitism and predation by bee flies and carabid beetles ranged up to 27 percent; average 6 percent. About 4 percent of eggs not viable, due to lack of moisture. (Brandvick). WISCONSIN - Grasshoppers, primarily M. femurrubrum, decreased noticeably; females continue to develop eggs. (Wis. Ins. Sur.). OHIO - Melanoplus femurrubrum and M. differentialis populations decreasing rapidly throughout northwest, central and west central areas. M. femurrubrum numbers very low in west central area; no M. differentialis adults found. (Lyon).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Infestation in southeast district ranges 0-4 percent of wheat plants infested; less than 20 percent of fields infested. In extreme southeast and east portions of this district, drought conditions were such that wheat did not emerge in time to be infested. Dry weather also was not favorable for fly emergence. (Peters). OHIO - Puparia easily found between leaf sheath and stalks of volunteer wheat plants throughout Marion, Morrow, Hardin, Auglaize, Shelby and Logan Counties in central and west central areas. Few autumn planted wheat fields examined with negative results. Many wheat plants not yet emerged because of drought conditions. (Lyon).

WHEAT STEM SAWFLY (Cephus cinctus) - OHIO - Infested wheat stems and stubble easily found in sections of Auglaize County, west central area. (Brown, Noble).

WHEAT STEM MAGGOT (Meromyza americana) - KANSAS - An occasional infested wheat plant noted in southeast area. (Peters).

FRUIT INSECTS

UNSPOTTED TENTIFORM LEAF MINER (Callisto geminatella) - OHIO - Heavy on unsprayed apple orchard near Columbus, Franklin County; 60-75 percent of leaves mined on some trees. (Forsyth, Lyon).

PEACH TREE BORER (Sanninoidea exitiosa) - MARYLAND - Light in apple trees at Fairland, Montgomery County. (U. Md., Ent. Dept.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OHIO - Nymphs and adults light to moderate in unsprayed apple orchard near Columbus, Franklin County; averaged 25-30 per leaf. Many dormant eggs noted on twigs. Also found on adjacent autumn-planted wheat fields. (Lyon).

WOOLLY APPLE APHID (Eriosoma lanigerum) - OHIO - Infested apple tree near Steubenville, Jefferson County. (Knight, Holdsworth).

SAN JOSE SCALE (Aspidiotus perniciosus) - ALABAMA - Reported earlier as attacking limbs and fruit of apple and pear in Auburn, now appears to have destroyed 50-75

percent of these 15 to 20-foot trees; trees 7-10 years old. Infestation appears to be one of most severe observed in many years and was first noted 3 years ago. (Bagby).

A LEAFHOPPER (Homalodisca insolita) - FLORIDA - Single specimen found in 100 sweeps of grasses and weeds near Port-of-Call, Tierra Verde, Pinellas County, October 24. This is southernmost record in State for this proven vector of phony peach disease. (Mead).

PEAR-SLUG (Caliroa cerasi) - NEVADA - Medium to heavy on cherry in Gardnerville, Douglas County. (Rivers).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Eggs easily found in several central area apple orchards; many treated and untreated orchards infested. Few crawlers still observed on unsprayed orchard near Columbus, Franklin County. (Lyon).

PECAN WEEVIL (Curculio caryae) - ALABAMA - Large numbers continue to emerge from seedling and Stewart pecans in Coosa-Tallapoosa-Chambers County area. Infestation appears greater in small orchards and isolated plantings in these counties in foothills of Piedmont Plateau than in coastal area further south. (McQueen).

ORANGE-DOG (Papilio cresphontes) - ARIZONA - Continues a problem on citrus in Yuma, Pinal and Maricopa Counties. (Ariz. Coop. Sur.).

AN ANTHICID BEETLE (Notoxus constrictus) - CALIFORNIA - Medium on orange trees in Orange Cove, Fresno County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (Myzus persicae) - CALIFORNIA - Populations medium on orange trees in Orange Cove, Fresno County. (Cal. Coop. Rpt.).

A SNOW SCALE (Unaspis citri) - FLORIDA - Moderate to severe on sweet orange and grapefruit at Melbourne, Brevard County. (Levan, Holley; Oct. 10).

BLACK CITRUS APHID (Toxoptera aurantii) - ARIZONA - Small numbers present in few citrus orchards in Maricopa County. (Ariz. Coop. Sur.).

CITRUS THRIPS (Scirtothrips citri) - ARIZONA - Caused light damage to citrus in Yuma and Maricopa Counties. (Ariz. Coop. Sur.).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Ten adults collected in McPhail traps at Nogales; this makes total of 28 collected this year. Fruit inspections continue negative. (Ariz. Coop. Sur.).

A GRAPE LEAFHOPPER (Erythroneura elegantula) - CALIFORNIA - Nymphs and adults medium on grapevines in Ukiah, Mendocino County. (Cal. Coop. Rpt.).

A WOOD BORER (Prionus sp.) - NORTH CAROLINA - Larvae present in rootstock of blueberry in Brunswick County. Bushes reported dying. Considerable damage noted on specimen examined. Det. by H. H. Neunzig. (Bickford).

TRUCK CROP INSECTS

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Populations increased in most lettuce-producing areas of Pinal, Yuma and Maricopa Counties. (Ariz. Coop. Sur.). FLORIDA - Caused light to moderate damage to 35 percent of 200 cabbage plants at Sanford, Seminole County. (Desin).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Damaging lettuce fields in Yuma, Maricopa and Pinal Counties. Some controls applied. (Ariz. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - CALIFORNIA - Larvae medium in crowns of strawberry plants in Fallbrook, San Diego County. (Cal. Coop. Rpt.).

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Adults active around pile of cull potato tubers on October 28 in infested area near Samaria, Monroe County; warm October undoubtedly favored continued field activity to unexpected late date. (Wells, Janes).

MEXICAN BEAN BEETLE (Epilachna varivestis) - ALABAMA - Extremely heavy on lima beans in home gardens in east central area; averaged 1 adult per linear foot. (McQueen). KANSAS - All stages found on garden beans in fair numbers in Doniphan County; 1 group of eggs per 3 plants and 10 larvae of all sizes per plant. Three adults found in each foot of row. Freeze of October 28 should stop activity. (Eshbaugh).

NITIDULIDS (Carpophilus spp.) - CALIFORNIA - C. hemipterus adults heavy on Hubbard squash in Madison and honeydew melons in Zamora, Yolo County. C. hemipterus and C. humeralis heavy in cantaloup fruit in Los Banos, Merced County. (Cal. Coop. Rpt.).

WESTERN SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata) - CALIFORNIA - Adults heavy on honeydew melons in Yolo, Yolo County. This beetle more prevalent this season than for several years. (Cal. Coop. Rpt.).

CABBAGE APHID (Brevicoryne brassicae) - ALABAMA - Continues extremely heavy on collards, cabbage and turnips in Lee County. Lady beetles apparently hibernating. (Canerday).

GREEN PEACH APHID (Myzus persicae) - TEXAS - Moderate populations damaging cabbage and turnips in Harris County. (Davis).

MELON APHID (Aphis gossypii) - CALIFORNIA - Medium on cantaloups in south Los Banos area, Merced County. This species in association with Macrosiphum euphorbiae and Empoasca sp. medium on banana squash in Bryte, Yolo County. (Cal. Coop. Rpt.).

APHIDS - WASHINGTON - Very large populations of apterae and alatae of Aphis fabae noted on random plants of sugar beets in Walla Walla, Walla Walla County. (Landis). CALIFORNIA - Adults and nymphs of Pemphigus sp. medium on sugar beets in Greenfield, Monterey County. (Cal. Coop. Rpt.). OHIO - Myzus persicae heavy on lettuce in Columbus greenhouse, Franklin County; averaged 100-150 per leaf. Controls necessary. (Lyon). GEORGIA - Unspecified species heavy on tomato in Gwinnett County. (Vanderford).

SOUTHERN GREEN STINK BUG (Nezara viridula) - FLORIDA - Severe on okra at Homestead, Dade County. (Todd, Oct. 14).

HARLEQUIN BUG (Murgantia histrionica) - ALABAMA - Isolated, medium infestation present on collards in Lee County. (Canerday).

A THRIPS (Frankliniella occidentalis) - CALIFORNIA - Nymphs and adults heavy on Hubbard squash in Yolo, Yolo County. (Cal. Coop. Rpt.).

LEAF MINER FLIES (Liriomyza spp.) - CALIFORNIA - Liriomyza sp., possibly pictella, medium in leaves of Hubbard squash in Yolo, Yolo County. Liriomyza sp. heavy in honeydew melons, in association with Drosophila melanogaster and Megaselia sp., at same location. (Cal. Coop. Rpt.). FLORIDA - Liriomyza sp. infesting 75 percent of 300 celery plants at Sanford, Seminole County. Damage ranged light to medium. (Desin).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - OKLAHOMA - All gin-trash inspections in Logan, Okfuskee, Pawnee and Payne Counties positive; heaviest number, 81 larvae per 50 bushels, found in Logan County. All lint-cleaner inspections in southwest counties positive, with first specimens of season found in Kiowa County. This for period October 21-25. (Okla. Coop. Sur.). ARIZONA - Severe infestations still found at Solomon, Graham County. One larva found in gin trash at San Simon, Cochise County. Adults continue to be collected in sex lure traps near Coolidge Airport, Pinal County. (Ariz. Coop. Sur.).

BOLLWORM (Heliothis zea) - ARIZONA - Continues active in Pinal and Maricopa County cotton fields. (Ariz. Coop. Sur.).

CABBAGE LOOPER (Trichoplusia ni) - NEVADA - Heavy larval population in Pahrump Valley, Nye County, aided in defoliating cotton fields prior to picking. (Bechtel, Stater, Zoller).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Large numbers still evident in cotton fields in Pinal and Maricopa Counties. Migration to other hosts causing considerable problems in many areas. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - NEVADA - Generally light and spotted in Moapa Valley, Clark County. (Bechtel, Zoller).

SPIDER MITES - NEVADA - Medium to heavy populations in many cotton fields in Moapa Valley, Clark County, beginning to decrease. (Bechtel, Zoller).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

MOUNTAIN PINE BEETLE (Dendroctonus monticolae) - CALIFORNIA - Infesting groups of sugar pine poles in 2,000-acre stand in Whiskey Falls-Peckinpah area, Sierra National Forest. Over 100 young trees already killed, with damage increasing. (F. W. Sharp, USFS). Appearing in Bear River area, Amador County. Salvage operations in progress; 400-acre area of sugar pine involved. (W. O. Cotter, USFS). Sanitation salvage sales being used to stem infestation threatening 6,400 acres of sugar pine and 1,200 acres in Dodge Ridge areas, Stanislaus National Forest, where some 1,600 trees killed. (Cal. Coop. Rpt.).

WESTERN PINE BEETLE (Dendroctonus brevicomis) - CALIFORNIA - Damaging ponderosa pines in 100-acre stand in Mokelumne, Amador County, and 80-acre stand in Barney Ridge, El Dorado County. Direct control being used where area to steep to log; salvage logging being used in other areas. (W. O. Cotter, USFS).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - GEORGIA - Infestations moderate in pines in Colquitt and Thomas Counties. (Elder, Oct. 24).

FIR ENGRAVER (Scolytus ventralis) - CALIFORNIA - Causing heavy kill of white fir in Dodge Ridge area, Stanislaus National Forest. Approximately 14,000 trees killed in 22,000-acre stand. (G. A. Rolloff, USFS).

A WEEVIL (Agronus cinerarius) - CALIFORNIA - This species and Physokermes sp., probably concolor, infesting white fir in 60 to 70-acre stand in Cow Creek, Plumas National Forest. Very little is known about these 2 pests; where they occur in heavy populations, severe damage results. (P. Intorf, USFS).

DOUGLAS-FIR TUSSOCK MOTH (Hemerocampa pseudotsugata) - CALIFORNIA - Defoliating white fir in Iron Mountain Road area, El Dorado National Forest; approximately 100 acres involved. (Parker, Reese, Hill; USFS).

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Larvae and pupae reported in 20 percent of buds in one planting of 4 to 5-year-old pines in Chilton County. Numerous undetermined aphids also feeding on pine needles in this orchard. (Helms).

WHITE-PINE APHID (Cinara strobi) - PENNSYLVANIA - Depositing much honeydew on white pine at State College, Centre County. (Udine, Oct. 21).

A PINE APHID (Schizolachnus piniradiatae) - PENNSYLVANIA - Very heavy on red pine at State College, Centre County; egg laying in progress. Det. by J. O. Pepper. (Pepper).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - OHIO - Heavy on Scotch pine and spruce in Wooster, Wayne County, northeast. (Neiswander).

GRASSHOPPERS - CALIFORNIA - Causing severe defoliation of ponderosa pine reproduction and native shrubs in Mill Flat Creek area, Sequoia National Forest. Some 250 trees, plus native shrubs, affected in 5-acre area. (R. W. White, USFS).

A DOUGLAS-FIR NEEDLE MINER (Contarinia pseudotsugae) - WASHINGTON - Infesting needles of Douglas-fir at Pullman, Whitman County. (Dodge).

A PINE NEEDLE GALL FLY (Cecidomyia pinirigidae) - ALABAMA - Infestations numerous on loblolly and slash pine used as ornamentals in Lee County. (McQueen).

SAGEBRUSH DEFOLIATOR (Aroga websteri) - CALIFORNIA - Severely damaging approximately 20,000 acres of sagebrush lands in area 6 miles southwest of Alturas, Modoc County. Approximately 50 percent of sage has been killed in this area. (E. T. Dowling, CDF).

FALL CANKERWORM (Alsophila pometaria) - NORTH DAKOTA - Females continue active in southeast. In Fargo, Cass County, 2,200 counted on single elm; this is cumulative figure over past 3-4 weeks. (N. D. Ins. Sur.; Post).

A TENT CATERPILLAR (Malacosoma sp.) - TEXAS - Large numbers of egg cases reported on oak trees in Travis County. Examination of 5 egg masses showed 90 percent viability of overwintering larvae. (Tex. Coop. Rpt.).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Continues active throughout State. (Okla. Coop. Sur.). IOWA - Very active in western and southern areas this fall. (Iowa Ins. Inf., Oct. 25).

ELM LEAF BEETLE (Galerucella xanthomelaena) - KANSAS - Damaging elms in Dickinson County, central area. This is a new county record. (Marvin, Oct. 24).

GIANT BARK APHID (Longistigma caryae) - DELAWARE - Adults and freshly laid eggs very abundant on oak twigs in an area of New Castle County. (Kelsey).

A WHITEFLY - GEORGIA - Moderate on cottonwood in Crisp County. (Turner, Taylor).

BEET ARMYWORM (Spodoptera exigua) - CALIFORNIA - Larvae heavy on chrysanthemum and carnation plants in nursery property in Salinas, Monterey County. (Cal. Coop. Rpt.).

A SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata tenella) - NEW MEXICO - Feeding on blossoms of dahlia and other ornamentals in Albuquerque area, Bernalillo County. (N. M. Coop. Rpt.).

APHIDS - PENNSYLVANIA - At State College, Centre County, Liosomaphis berberidis heavy and depositing much honeydew on barberry (Udine, Oct. 28) and alates of Aphis crataegifoliae heavy on thorn-apple (Pepper, Oct. 28). Both species det. by J. O. Pepper. Unspecified species very abundant on many hosts. (Udine). MARYLAND - Winged adults and nymphs of undetermined species infesting Russian-

olive (Elaeagnus angustifolia) at Princess Anne, Somerset County. (U. Md., Ent. Dept.). GEORGIA - An unspecified species heavy on rose in Gwinnett County. (Vanderford). OHIO - Periphyllus lyropictus heavy on Norway maples throughout west central area. (Lyon). Undetermined species continue to infest willows near Newark, Licking County, central area. (Scheetz, Holdsworth). UTAH - Unspecified species necessitate weekly controls in university greenhouses at Logan, Cache County. (Knowlton). NEVADA - Capitophorus hippophaes heavy on Russian-olive (Elaeagnus angustifolia) nursery stock at the State Tree Nursery in Sparks, Washoe County. (Bechtel, Christner).

TARNISHED PLANT BUG (Lygus lineolaris) - IOWA - Feeding on chrysanthemum, zinnia and marigold; damage noticeable on chrysanthemums. (Iowa Ins. Inf., Oct. 25).

A PSYLLID (Psylla uncatoides) - CALIFORNIA - Heavy on albizzia trees in Saratoga, Santa Clara County. (Cal. Coop. Rpt.).

AZALEA WHITEFLY (Pealius azaleae) - ALABAMA - Numbers increasing on azaleas in Lee County. (McQueen).

COCCIDS - ALABAMA - Fiorinia theae becoming heavy on Burford holly and infestations of lesser intensity common on camellia in east central counties. (Bagby et al.). FLORIDA - Pseudaulacaspis pentagona infested Koelreuteria paniculata, stem of Allamanda sp. and Ligustrum sp. at Eatonville, and Ligustrum sp. at Orlando, Orange County (Crews, Oct. 23-24); Fiorinia theae severe on leaves of Camellia sp. at Clermont, Lake County (Brown, Fatic; Oct. 21); Ceroplastes floridensis severe on stem and leaves of Ilex cornuta at Zellwood, Orange County (Musgrove, Oct. 24). VIRGINIA - Unaspis euonymi heavy on euonymus at a location in Walters, Isle of Wight County. (Amos, Johnson; Oct. 24). UTAH - Unspecified species infesting sansevieria and aralia in university greenhouses at Logan, Cache County. (Knowlton). CALIFORNIA - Saissetia nigra medium on daphne nursery stock in Santa Rosa, Sonoma County. (Cal. Coop. Rpt.).

TWO-STRIPED WALKINGSTICK (Anisomorpha buprestoides) - GEORGIA - Moderate on azaleas in Pierce County. (Camp, Oct. 24).

A LEAF MINER FLY (Phytobia maculosa) - FLORIDA - Severely infested chrysanthemums at Bradenton, Manatee County. (Kelsheimer, Mead; Oct. 23). Unusually heavy on untreated plants this season; parasites at minimum, much below last year. (Kelsheimer).

DOGWOOD CLUB-GALL MIDGE (Mycodiplosis alternata) - ALABAMA - Common on native dogwoods and in ornamental plantings in central and southern areas. (Barwood et al.).

CURLED ROSE SAWFLY (Allantus cinctus) - OHIO - Severe damage noted on roses throughout western and central areas; larvae defoliating plants. (Lyon).

CYCLAMEN MITE (Steneotarsonemus pallidus) - DELAWARE - Causing severe injury to African-violets at a location in New Castle County. (Bray).

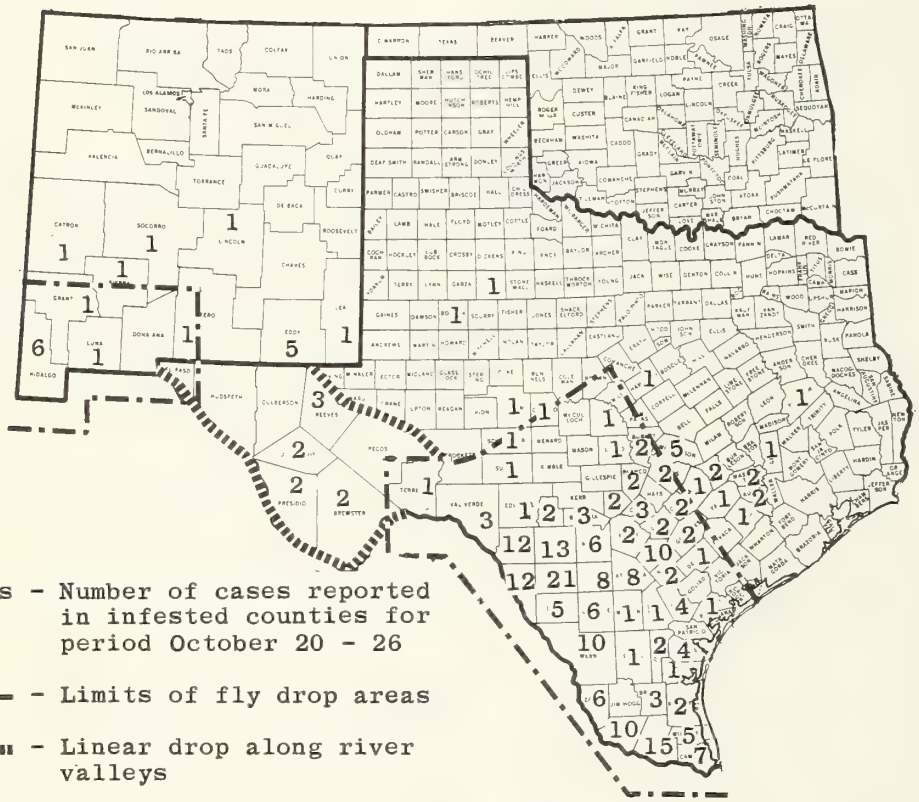
PRIVET MITE (Brevipalpus obovatus) - CALIFORNIA - Heavy on pittosporum plants in Clearlake Highlands area, Lake County. (Cal. Coop. Rpt.).

SPIDER MITES (Tetranychus spp.) - ALABAMA - Present but not heavy on azaleas and holly in Lee County. (McQueen).

INSECTS AFFECTING MAN AND ANIMALS

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period October 20 - 26, a total of 242 infestations was reported from 65 counties in TEXAS and 19 infestations from 10 counties in NEW MEXICO. Screw-worm was reported for the first time this year from Houston County, Texas. A total of 129,452,250 sterile flies was released during the period. (Anim. Dis. Erad. Div.).



MOSQUITOES - DELAWARE - Few adults of Aedes sollicitans persisting in one area of eastern Kent County. (Lake). FLORIDA - Aedes taeniorhynchus moderate at De Soto National Memorial, 5 miles west of Bradenton, Manatee County (Oct. 22), and light at Bonnie Fortune Key, Fort De Soto Park, Pinellas County (Oct. 24). Aedes vexans, Aedes infirmatus and Psorophora ciliata light at Gainesville, Alachua County (Oct. 28). (Mead). TEXAS - Unspecified species considerably annoying to residents of Brazos County. (Meisch). CALIFORNIA - The mosquito control fish program for Sacramento-Yolo Mosquito Abatement District began early in 1963; plants of fish (Gambusia affinis) made in 935 locations. Rice paddies were an important phase of the program, with 83 fields planted. Some 1,257,309 foundation stock fish were used for initial plants. G. affinis are placed in holding areas in fall and by following April, sufficient reproduction has occurred to make foundation plantings. For first time, sufficient foundation stock was available for 1963 plantings. Establishment and reproduction were exceptional and mosquito control in planted areas needed no chemical control. If sufficient foundation stock in available, program will be expanded in 1964. (J.Fowler,Mosquito Abatement).

HORN FLY (Haematobia irritans) - GEORGIA - Light on herd of beef animals in Spalding County. Herd has access to backrubber. (Roberts). OKLAHOMA - Populations decreased considerably in Stillwater area, Payne County, with 25-50 per head on yearling steers and 15-25 per head on cows. Ranged 100-500 per head on cows in Bryan County. Populations moderate to heavy in Cotton (southwest), Garvin (south central), and Mayes (north central) Counties. (Okla. Coop. Sur.).

STABLE FLY (Stomoxys calcitrans) - OKLAHOMA - Averaged 1 per head on animals in Stillwater area, Payne County. (Okla. Coop. Sur.).

HOUSE FLY (Musca domestica) - OKLAHOMA - Continues active in sheltered areas. (Okla. Coop. Sur.).

BED BUG (Cimex lectularius) - OHIO - Heavy populations observed in poultry house near Wooster, Wayne County, northeast; present in cracks and crevices in nest boxes. (Sleesman, Lyon).

FLEAS (Ctenocephalides spp.) - OKLAHOMA - Causing concern to homeowners in Mayes County; infestations present in lawns and homes. (Okla. Coop. Sur.).

YELLOW JACKETS - GEORGIA - Very abundant over State. (Lund, Johnson; Oct. 24).

A BROWN SPIDER (Loxosceles reclusa) - ILLINOIS - Reported for the first time in Pulaski County October 30. (Ill. Ins. Rpt.).

BROWN DOG TICK (Rhipicephalus sanguineus) - OKLAHOMA - Continues to cause some concern to homeowners in Stillwater area, Payne County (north central). (Okla. Coop. Sur.). OHIO - Common on dogs during past few weeks near Sidney, Shelby County, west central area. (Berlekamp).

WINTER TICK (Dermacentor albipictus) - OKLAHOMA - First activity of season noted in Cherokee County area, east central. (Okla. Coop. Sur.).

EAR TICK (Otobius megnini) - TEXAS - Heavy, localized populations reported from various domestic animals in Lampasas County. (Thomas). UTAH - Infesting saddle horses at Logan, Cache County, and cattle in western Iron County. (Knowlton).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (Leptocoris trivittatus) - MARYLAND - Causing nuisance on 2 properties in Rockville, Montgomery County; swarming on buildings. (U. Md., Ent. Dept.). VIRGINIA - Abundant at a location in Lynchburg, Campbell County (Oct. 28), and a location in Roanoke, Roanoke County (Oct. 27). (Tarpley). NORTH CAROLINA - Annoying at a location in Wilkes County. (Pratt, Robertson). OHIO - Adults continue to annoy homeowners throughout central and northwestern areas. (Rings, Blair). UTAH - Annoyance increasing with colder nights in northern communities; invading schoolrooms at Richmond, Cache County. (Knowlton).

RED FLOUR BEETLE (Tribolium castaneum) - ALABAMA - Becoming pest of cereals and other food stuffs in pantries at several locations. (McGlohon et al.).

SQUARE-NECKED GRAIN BEETLE (Cathartus quadricollis) - ALABAMA - Reported as pest of cereals and other foods in pantries in several locations. (McGlohon et al.).

LESSER GRAIN BORER (Rhyzopertha dominica) - CALIFORNIA - Heavy infestation in cupboards and medicine chest in residence in San Bernardino, San Bernardino County. (Cal. Coop. Rpt.).

BROWN BANDED COCKROACH (Supella supellectilium) - DELAWARE - Several heavy infestations in homes reported in northern area of New Castle County. (Burbutis). MARYLAND - Infesting kitchen of home at Linthicum Heights, Anne Arundel County. (U. Md., Ent. Dept.).

CLUSTER FLY (Pollenia rudis) - OHIO - Controls necessary at Eaton, Preble County (Blair); adults beginning to cause annoyance in many homes in southwestern area (Lyon). UTAH - Numerous in home at Orem, Utah County. (Knowlton).

HOUSE FLY (Musca domestica) - UTAH - Troublesome in restaurants, grocery stores, homes and churches in many communities. Troublesome in large cafeteria at Logan, Cache County. (Knowlton).

CARPENTER BEE (Xylocopa virginica) - MARYLAND - Minor infestation reported in porch at Baltimore. (U. Md., Ent. Dept.).

STORED-PRODUCT INSECTS

Stored Grain Insects in Wyoming - Light adult numbers of CONFUSED FLOUR BEETLE (Tribolium confusum), RED FLOUR BEETLE (T. castaneum) and SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) each found in 2 of 11 farm granaries inspected in Platte and Converse Counties. Adults of CADELLE (Tenebroides mauritanicus) were light and active in 1 of these same 11 granaries. (Marks).

YELLOW MEALWORM (Tenebrio molitor) - OHIO - Larvae heavy in cornmeal at elevator in Champaign County. (Lyon).

INDIAN-MEAL MOTH (Plodia interpunctella) - OHIO - Light webbing damage and low larval populations noted at elevator in Fort Laramie, Shelby County. (Lyon).

MISCELLANEOUS INSECTS

BANDED WOOLLYBEAR (Isia isabella) - ALABAMA - Great numbers migrating in several locations in southern part of Mobile County during past 2 weeks. (Seibels, Bolton).

LESSER MEALWORM (Alphitobius diaperinus) - OHIO - Larvae and adults moderate in poultry litter near Wooster, Wayne County. (Lyon).

A SOLDIER FLY (Hermetia illucens) - MARYLAND - Infesting decayed sweetpotatoes at Ridgley, Caroline County. (U. Md., Ent. Dept.).

CORRECTIONS

CEIR (40):1199 - Agricultural Pests - Total: second column, Control costs, should read 89,083,473 instead of 181,983,973 and last column, Estimated Overall Loss, should read 263,189,376 instead of 262,512,276. (California Losses).

CEIR (40):1200 - Agricultural and Animal Pests - Total: second column, Control Costs, should read 89,124,573 instead of 182,025,073. (California Losses).

ADDITIONAL NOTES

COLORADO - WHEAT CURL MITE (Aceria tulipae) found on fall planted wheat in Logan County. Symptoms of wheat streak mosaic present on wheat in Logan, Sedgwick, Phillips and Washington Counties. (Jenkins, Dickens). Trace numbers of GREENBUG (Schizaphis graminum) present on fall planted wheat in Logan, Lincoln and Larimer Counties. (Hantsbarger, Jenkins). SPOTTED ALFALFA APHID (Therioaphis maculata) populations high on new plantings of alfalfa in Weld County; controls recommended in some fields. (Bayes). Trace numbers observed in Larimer, Logan and Sedgwick Counties. (Hantsbarger, Jenkins, Jarvis).

LIGHT TRAP COLLECTIONS

	Temperature °F	Precipitation	Type of trap *	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronia diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	Heliothis zea (bollworm, corn earworm)	Laphygma frugiperda (fall armyworm)	Loxostege comstitalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquemaculata (tomato hornworm)	Protoparce sexta (tobacco hornworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Trichoplusia ni (cabbage looper)	Major crop **
ARKANSAS																								
Kelso 10/24-30										25														
Fayetteville 10/24-30										10										3				
FLORIDA																								
Gainesville 10/29			BL					1																
GEORGIA																								
Tifton 10/24-30			BL							31														
KANSAS																								
Garden City 10/14, 16, 18, 21, 23, 25				49		306	14			840		84			14	10			63				
Hays 10/17, 19, 22, 24, 26				26		58	14			165		43			2	20			42				
Manhattan 10/19-30						27				37		9			4	7			5				
Mound Valley 10/17, 21, 24				3						26		65			1	4			18				
Wathena 10/17, 19, 24				47		4	38			976		149			7	30			50				
MISSISSIPPI																								
Stoneville 10/25-31	35-84	-	MV	24				149		17	61				10	10			31	468		18	
Stoneville 10/25-31	35-84	-	BL	56				191		31	85				5	17			45	710		24	
NORTH DAKOTA																								
Fargo 10/26 - 11/1				2		1				3									3				
SOUTH CAROLINA																								
Charleston 10/21-27	54-83	2.8	BL	38				17	1	51	4					14			115			2	
Charleston 10/28 - 11/3	31-85	0.33	BL					1		3					2				11				
Clemson 10/12-18										10	1				1	1							
Clemson 10/19-25										2	3					1			2			1	
TENNESSEE (Counties)																								
Maury 10/8-14				36						144					47	76	1	4	62				
Maury 10/15-21				12						140					22	36			70				
Robertson 10/8-14				17						139					33	61		3	56				
Robertson 10/15-21				10						56									20				
Cumberland 10/8-14				27						89	6				11	22			34				
Cumberland 10/15-21				14						105						3	1		21				
Greene 10/8-14				9						17	2					9			12				
Greene 10/15-21				2						8					2	1			7				
Blount 10/8-14				18						79					4			2	31				
Blount 10/15-21										4						1			2				
Johnson 10/8-14				3						10					12				6				
Johnson 10/15-21				2						3					3	2			1				
Madison 10/15-21				8						136						8			36				

* BL = blacklight; I = incandescent; MV = mercury vapor ; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

LIGHT TRAP COLLECTIONS

	Temperature F°	Precipitation	Type of trap *	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (budworm)	Heliothis zea (bollworm, corn earworm)	Laphygma frugiperda (fall armyworm)	Loxostege comixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquemaculata (tomato hornworm)	Protoparce sexta (tobacco hornworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Trichoplusia ni (cabbage looper)	Major crop **
TEXAS																								
Brownsville 10/26-30			6 BL	73		2		97		27	1616				104	30		9	336			35	
Waco 10/26-11/1			BL	21		3		85		46	1741				39	25			17	571		12	
WISCONSIN																								
Middleton 10/23-30			BL	16						88					8				21				
Madison 10/23-30			BL	38						160					19				44				
De Forest 10/22-29			BL	8						280					9				9				

Weather of the week ending November 4 (continued from page 1308)
coastal California, and parts of Idaho, Utah, Wyoming, and Colorado.

Hurricane Ginny, which lay southeast of Hatteras, North Carolina, at the beginning of the week, brought 1 to 2 inches or more of rain to the eastern portions of New England. Amounts decreased to very light westward. Snowfall from Ginny reached 15 inches at Greenville, Maine, and some mountain areas received more. Temperatures for the week averaged near seasonal over most of the Nation. They averaged 1° to 2° above normal over much of the West. Temperatures at Phoenix, Arizona, averaged 8° above normal. Temperatures were cooler than normal over most of the eastern half of the Nation. Departures increased to -9° at Tallahassee, Florida. A few areas received no rain or only light sprinkles. These included a strip along the Canadaian border from the Rocky Mountains to Minnesota, most of Nebraska, and Kansas, and a strip along the Mexican border from Arizona to, but not including, the lower valley in Texas. Precipitation exceeded 1 inch along the northwest Pacific coast, over the Appalachian Mountains in North Carolina, Virginia, and West Virginia, and over the eastern half of New England. Nantucket, Massachusetts, and Eastport, Maine, received more than 4 inches. Much of the "drought area" received from 0.05 to 0.50 inch. Snowfall accumulations reached 19 inches at Stevens Pass, Washington, and 58 inches in the Mt. Baker ski area. Snow fell in the higher areas of California, Idaho, Arizona, and the Rocky Mountain States. Snow flurries also occurred in the northern Great Plains and in the Lake region in addition to the northern Appalachians as previously mentioned. (Summary supplied by U.S. Weather Bureau).

* BL = blacklight; I = incandescent; MV = mercury vapor ; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 694th meeting of the Hawaiian Entomological Society held on October 14, 1963.

A MANTID (Orthodera sp.) - Two males and 3 females were caught during latter part of September in Ewa Beach area; all found on castorbean (Ricinus communis). Dr. J. W. Beardsley first reported this insect when one specimen was taken in a light trap at Waipio in September 1962. Since its collection, one female laid 3 batches of eggs. This mantid is now probably established in the State. Determination by J. W. Beardsley. (James Kim).

A CLUBIONID SPIDER (Cheiracanthium diversum Koch) - Collected on Kaunakakai, Molokai, and Kaumalapau, Lanai, on September 26 and 27, respectively. (W. C. Mitchell). Collected at several localities on Molokai on September 25 and 26. The bite of this spider has caused serious discomfort to humans on Oahu in several recorded instances. (J. W. Beardsley). These are new island records.

SOUTHERN GREEN STINK BUG (Nezara viridula (L.)) - Survey conducted by W. C. Mitchell, Harry Nakao and J. W. Beardsley on Molokai and Lanai; infestations reported as follows: Molokai - Aug. 25; Tamura Farm, Kaunakakai, Molokai; confirmed. Sept. 26; again confirmed with collection of one male on tomatoes. Sept. 18; Burrows Farm, Palaau (Apana 1), one adult collected by R. Burrows and infestation confirmed Sept. 25 by finding numerous nymphs. Sept. 23; one adult collected by J. Uraichi at Kualapuu; further investigation revealed widespread infestation around California Packing Company housing. Sept. 24; single adult alighted on C. Lloyd at Hoolehua; no specimens found in area. Lanai - Aug. 27; found at Lanai City; confirmed on Sept. 27. Sept. 5; single female taken by N. Oda at Kaumalapau. Sept. 27; infestation widespread in harbor area. (W. C. Mitchell).

A MYMARID WASP (Patasson calendrae (Gahan)) - Six releases of this species made on Oahu thus far; 4 between August 16 and 29 at the Kunia substation of the Hawaiian Sugar Planters Association; one on August 18 at Makiki Station; and one August 30 at the Wailua Agricultural Company. Last release consisted of 150 wasps; other 5 totaled 27 wasps. Establishment of P. calendrae in State uncertain, but breeding program to be continued vigorously in hope of establishment because recent observations in laboratory have shown that species will not only parasitize eggs of the BILLBUGS, Sphenophorus cariosus and S. venatus vestitus, in vitro, but it is equally effective on the eggs of NEW GUINEA SUGARCANE WEEVIL (Rhabdoscelus obscurus (Boisd.)), the most important pest of sugarcane in Hawaii. (F. Bianchi, C. E. Pemberton).

AN AGAONID WASP (Euprestina verticillata Waterston) - Numerous adults observed October 7 about Chinese banyan trees at residence in Honolulu; caused annoyance to household; trees sprayed. (H. Arnold, Jr., C. E. Pemberton).

AN ARMORED SCALE (Kuwanaspis sp.) - Collected on leaves of ornamental bamboo at 2 widely separated localities during latter part of 1962; at Hilo, Hawaii, on October 3 by J. W. Beardsley and at Nanakuli, Oahu, on December 8 by E. Shiroma. A number of species of Kuwanaspis which are confined to bamboos are known from the Orient, and one species, K. pseudoleucaspis (Kuwana), has been established in Hawaii for a number of years. The newly discovered species, which is new to Hawaii, closely resembles K. takahashii Takagi from Japan, except that the latter lacks the perivulvar pores found in the Hawaiian form. The newly discovered Kuwanaspis in Hawaii may be one of several described by the late Professor R. Takahashi from Taiwan, but pertinent literature or specimens for comparison are not available locally. Identification to genus made by J. W. Beardsley. (J. W. Beardsley).

A VESPID WASP (Polistes exclamans exclamans Viereck) - Collected at several places around Kaunakakai and at Paalau, Molokai, on September 25 and 26. This is the first record outside of Oahu in Hawaii. (J. W. Beardsley).

A CICADELLID LEAFHOPPER (Scaphytopius loricatus (Van Duzee))-Collected in vicinity of Kaunakakai, Molokai, on September 25 and 26; first record for Molokai. (J. W. Beardsley).

A DELPHACID LEAFHOPPER (Sogatella kolophon (Kirkaldy)) - Collected at Lanai City, Lanai, on September 27; first record for Lanai. (J. W. Beardsley).

A PSOCID (Ectopsocus maindroni Badonnel) - Found covering walls and cupboards of residence at Kailua, Oahu, on October 5. This species not recorded previously from Hawaii, although in early 1962, Dr. Mockford of Illinois sent specimens of this species that had been intercepted at Honolulu on material originating in Hong Kong. Species originally described from Arabia, and has since been reported from the Congo, Malaya, Hong Kong and Taiwan. Species apparently has wide range of habitats; it has been taken on vegetation, in drawers and closets of private houses, in a breakfast cereal packet, in cavity of a wild fig, from a young fish owl, and from quite deep inside the Batu Caves of Malaya. The infested house in Honolulu was on a recently constructed estate, and there had been trouble with mildew in this and neighboring houses, which also harbored the insects. Moldy shoes in a closet were infested, and it seems likely that the infestation was associated with the presence of mold. (W. B. Thornton).

A PARASITIC ENCYRTID (Exoristobia philippinensis Ashmead) - Reared from puparia of Trichopoda pennipes F., a parasite of Nezara viridula (L.). This is first record of this hyperparasite attacking T. pennipes. A specimen of E. philippinensis was taken in a light trap at Honolulu in June 1961, according to B. D. Burks who made the determination. (C. J. Davis).

A PARASITIC TACHINA FLY (Trichopoda pennipes F.) - Adults observed October 9 at the mauka side of Wahiawa (elev. 1,200 ft.). One adult Nezara viridula had 237 T. pennipes eggs on its body. (W. C. Mitchell). A number of shipments of this stink bug parasite were sent from Gainesville, Florida, by Noel Krauss during September and October for breeding and distribution throughout Hawaii for biological control of N. viridula. (C. J. Davis).

A TARO LEAFHOPPER (Tarophagus proserpina Kirkaldy) - Found established on Molokai on September 25 by Harry Nakoa and W. C. Mitchell at Halawa and Wailau Valleys. (C. J. Davis).

A GIANT AFRICAN SNAIL (Achatina fulica Bowdich) - Reported from Kalaupapa settlement on Molokai by Koah Pekelo on September 25. On October 7, a resident of Manaloa turned over a living African snail (3 inches long) to Jack Blalock, thus making the second locality record for Molokai. (C. J. Davis).

RASPBERRY CROWN BORER (Bembecia marginata (Harris)) - Liberations of this aegeriid commenced at Kokee in September (total of 90 adults released) to control blackberry, a serious weed pest of Kokee and similar habitats in Hawaii. B. marginata was collected in Oregon by Noel Krauss. (C. J. Davis).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

INDIAN COTTON JASSID (Empoasca devastans Distant)

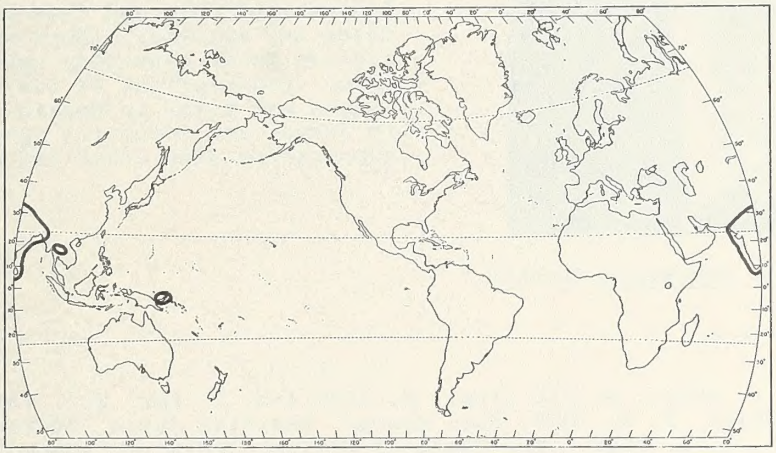
Economic Importance: This cicadellid is a well known major pest of cotton, and the most important representative of the genus Empoasca on the Indo-Pakistan sub-continent. The pest came into prominence early in the 1900's when it was found attacking American varieties of cotton newly introduced in the Punjab. Since then, it also has been reported as being serious on okra, potato, tomato and pepper. The latter three were severely damaged during 1957-58 in West Pakistan, principally in the southern regions of the country. E. devastans sucks the sap from cotton leaves causing them to shed. This results in a shedding of bolls by the plant and a reduction in the quality of lint produced by bolls remaining on the plant. Susceptible varieties often suffer a 25 percent or greater loss.

Among other species of Empoasca, E. kerri var. motti Pruthi and E. punjabensis Pruthi occur with E. devastans on cotton in the Punjab. Studies conducted during 1940-42 showed that populations of the latter were low in some localities early in the season, but the percentage increased slowly and reached a high figure towards the end of the season, and was more evident in the southwestern part of the Punjab than elsewhere.

Because of the seriousness of this pest on American varieties of cotton in the Punjab, preventive and protective measures became essential. Research studies, which began in 1937, indicated that the hairiness of the leaf vein appeared to be the most important factor in resistance, and the use of hairy varieties of cotton is recommended where infestations are heavy. Tree cotton and its varieties are practically immune.

Distribution: Ceylon, India, Pakistan (both East Pakistan and West Pakistan), Thailand (northern) and New Britain. Recent records (Ghauri, 1963) show that the distribution of E. devastans extends further to the east than recorded formerly, and approaches that of E. terraereginae Paoli, which is restricted to Queensland, Australia. The latter species is also a serious pest of cotton.

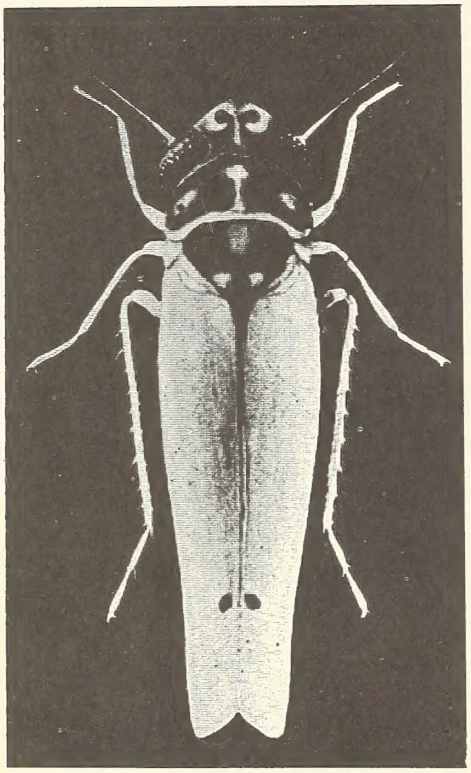
Hosts: Cotton, okra, potato, tomato, eggplant, pepper, kenaf hibiscus, linden hibiscus (emajagua), hollyhock, castorbean, sunflower, Hindu datura and cacao.



Distribution of Empoasca devastans Distant

Life History and Habits: The biology as studied in the Punjab is as follows: Full-grown cotton leaves, 35-45 days old, are preferred for oviposition. Infestation begins the latter part of June or early July, six weeks after planting, reaches a peak the last half of August and practically disappears by the beginning of November. High atmospheric humidity was found to be the chief factor favoring the increase. Eggs are laid inside the leaf veins, usually in the spongy parenchymatous layer between the vascular bundles and the epidermis and have an incubation period of about 4-11 days. A female may lay up to 29 eggs. Nymphs molt 5 times. This stage requires from 7 days in the fall to 21 days during the winter. Unmated adults of E. devastans lived for 90 days or longer, but paired adults did not survive beyond 5 weeks in summer and 7 in winter. A total of 11 generations a year have been observed, but adults are long-lived and the oviposition period is extended; therefore, there is considerable overlapping of broods.

Description: ADULT - Head, pronotum and scutellum pale ochraceous; vertex with two black spots on apical margin; face with the lateral areas more or less distinctly pale brownish; body beneath pale ochraceous; legs and tegmina pale greenish-ochraceous, the latter with a black spot near apex of each claval area; vertex of head short, concially rounded anteriorly, more than half as long as breadth between eyes; pronotum with three grayish-white spots near anterior margin; scutellum spotted with grayish-white; tegmina extending far beyond abdominal apex. Length excluding tegmina 3 mm. The above adult description is the original by W. L. Distant (3). The most noteworthy feature by which the adults can be recognized in the field is the presence of a prominent black spot on each of the tegmina near apex of the claval area. Seasonal changes in coloration are also present. The summer form is yellowish-green with antennae pale white, eyes a mosaic of green and white, tegmina with greenish tinge and legs pale green. The winter form is reddish-brown with antennae pale white, eyes dark violet, tegmina with a brownish tinge and legs green. In between these two extremes, there may be many intermediate forms depending upon the time of year. Descriptions of the various nymphal stages are given in Husain (5). (Prepared in Survey and Detection Operations in cooperation with other ARS agencies).



Adult of Empoasca devastans Distant

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Illustration of adult from Husain.

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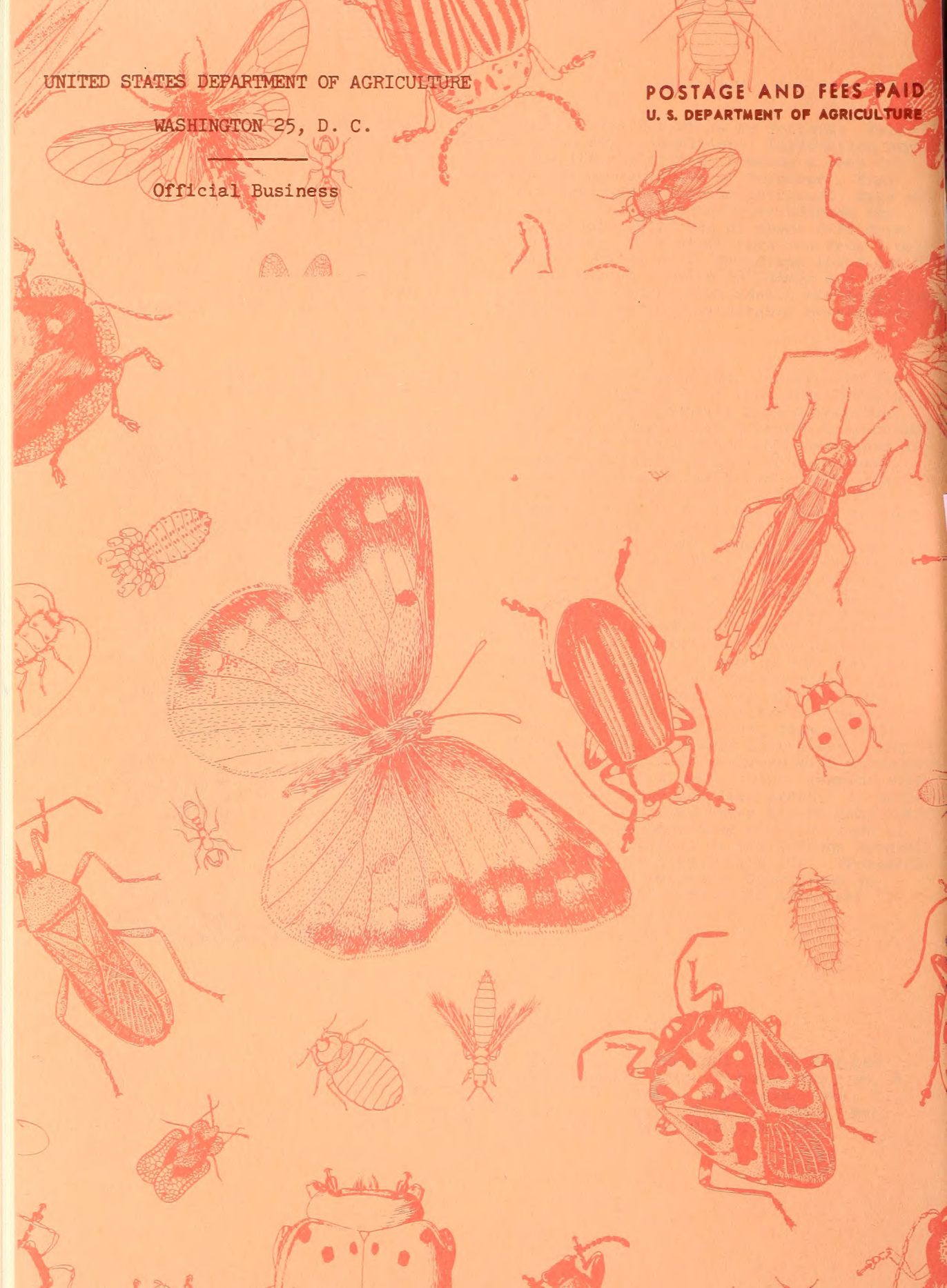
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